

## **REMARKS/ARGUMENTS**

### **Status of Claims**

Claims 1 to 29 are currently pending in the application.

### **35 U.S.C. § 103(a) Rejections**

In rejecting claims under 35 U.S.C. § 103(a), the Examiner bears the initial burden of establishing a *prima facie* case of obviousness. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992). *See also In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). It is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d, 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966), viz., (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; and (3) the level of ordinary skill in the art. The Graham factors, including secondary considerations when present, are the controlling inquiries in any obviousness analysis. Once the findings of fact are articulated, Office personnel must provide an explanation to support an obviousness rejection under 35 U.S.C. 103. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). According to *KSR*, for the Patent Office to properly combine references in support of an obviousness rejection, the Patent Office must identify a reason why a person of ordinary skill in the art would have sought to combine the respective teachings of the applied references. Only if this initial burden is met does the burden of coming forward with evidence or argument shift to the appellant. *See Oetiker*, 977 F.2d at 1445. *See also Piasecki*, 745 F.2d at 1472. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See Oetiker*, 977 F.2d at 1445; *Piasecki*, 745 F.2d at 1472.

Applicant's analysis below demonstrates that the Examiner has failed to properly conform to the aforementioned guidelines for a finding of obviousness under 35 U.S.C. 103, that is the factual determinations set forth in *Graham v. John Deere Co.* and the reason why a person of ordinary skill in the art would have sought to combine the respective teachings of the applied references as required by *KSR*.

**Claims 1 to 8, 11 to 18 and 21 to 29**

The Examiner has stated that claims 1 to 8, 11 to 18 and 21 to 29 are unpatentable under 35 U.S.C. 103(a) over Alriksson *et al.* (U.S. Patent No. 6,977,938, hereinafter Alriksson) in view of Dolganow *et al.* (U.S. Patent Publication No. 2006/0123110, hereinafter Dolganow) and McAllister *et al.* (U.S. Patent Publication No. 2001/0010681, hereinafter McAllister).

***Claim 1***

**Missing Elements**

The following is a discussion of why the cited references do not disclose all the elements of the rejected claims. While it may be considered that “the mere existence of differences between prior art and an invention does not establish the invention’s non-obviousness”, Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one skilled in the art (Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in view of the Supreme Court Decision in *KSR international Co. v. Teleflex Inc.*, published in Federal Register Vol. 72, No. 195 October 10, 2007). As such, if elements from a claim are not disclosed by the combination of cited references and no valid reasoning is provided why the missing elements would be obvious, this may provide a strong basis for why a claim should not be rejected based on obviousness.

With regard to claim 1, the Examiner alleges that Alriksson discloses “a method of routing packets from a wireless communications terminal in column 3, lines 3-6, in which it is indicated by the Examiner that in “source routing” disclosed by Alriksson the route is chosen by the terminal.

The Examiner concedes that Alriksson does not disclose “receiving, via a respective wireless link from at least one of a plurality of wireless access nodes forming a network, network information relating to links between nodes”. The Examiner alleges that Dolganow discloses this limitation in the form of a source routing protocol using available resource advertisements for identifying a path as disclosed in the abstract of Dolganow and paragraph [0033] of

Dolganow, in which an example of resource information is disclosed as being available bandwidth.

Applicant submits that Dolganow does not deal with wireless links.

In the Response to Arguments section on page 9 of the Final Office Action, in response to above statement, which also appeared in the Office Action response submitted on December 8, 2008, the Examiner states that the Examiner never stated Dolganow teaches wireless communications. The Examiner goes on to states that "With respect to the independent claims, all references teach source routing and therefore the Examiner maintains that the combination of the references is appropriate".

To emphasize why the combination of references is not appropriate based on the blanket statement that all of the cited references disclose source routing, Applicant will now briefly bring to the Examiner's attention selected portions of the description of the present application that discuss the differences between nodes in a network performing source routing, in a manner analogous to Dolganow and McAllister, and the novel approach of a terminal performing routing of a packet at the terminal recited in the claims of the present application.

Referring to the present application at page 4, starting at line 8, a conventional manner of routing packets is described for a wireless terminal accessing a network via a wireless access node. Line 25 states "In each of these cases, all decisions on how to route packets through the wireless network at mode independently of the mobile device or terminal".

Furthermore, at page 8, starting at line 7, the present application states:

It will be appreciated that link state routing protocols and some of their standard extensions already provide mechanisms to convey updated link state conditions for the route selection process in the network. However, known route selection processes take place in the nodes of the network, and link state messages are only exchanged between the nodes. The last hop wireless link conditions are not considered in any such route selection, and they are not available to the routing decision engine or process at the network nodes.

Thus in known networks, with routing decisions made only at the network nodes, a terminal does not participate in route selection and instead must use signalling messages over its wireless link to the network to convey QoS requirements for each traffic flow to the network, and the network nodes then invoke a route selection process. This has the disadvantages of signalling overhead not only for providing the QoS requirements initially but also for maintaining established QoS states throughout the packet flow.

Furthermore, in this prior art case the route selection by the network nodes and the access point selection by a mobile terminal are not coordinated. A mobile terminal has no knowledge of conditions in the network, and simply picks an access point that provides the best signal strength, which may be inadequate or undesirable for the required QoS in view of conditions within the network. In other words, the separate routing decisions in the network nodes based on conditions in the network and access point decisions by the terminal based on signal strength may result in a combination that may not satisfy QoS requirements.

In contrast, in embodiments of this invention the terminal is responsible for the route selection. Consequently, conditions (e.g. available bandwidth, current delay, bit error rate, radio signal strength, etc.) of the last hop wireless link between the terminal and the network can be considered in the route selection process. This allows use of alternative access points, and hence alternative routes, that may have a signal strength that may not be the best (while still being enough to provide network connectivity) but have a better prospect of supporting the required QoS of the traffic flow. In contrast, a route that includes the wireless link having the best signal strength may not provide enough resources, for the last hop or within the network, to support the required QoS.

Applicant submits that Dolganow describes a system that is substantially the same as what is described above, namely a network in which a network node performs routing of a packet through the network in which last hop wireless link conditions, that is the wireless access

link between the wireless terminal and the access node, are not considered in the routing selection. It is this same network link that is used for receiving network information. Therefore, from the perspective of the claim as a whole, Applicant submits that it is particularly relevant that Dolganow does not disclose or pertain to a wireless terminal having functionality reciting claim 1. Therefore, Applicant maintains that Dolganow does not disclose “in the terminal: receiving, via a respective wireless link from at least one of a plurality of wireless access nodes forming a network, network information relating to links between the nodes”.

The Examiner concedes that Alriksson does not disclose “selecting a route via the network for packets from the terminal in dependence upon the network information and supplying packets with information relating to the selected route”. The Examiner alleges that Dolganow discloses this limitation in the form of the source routing protocol using available resource advertisements for identifying a path as described in the abstract. For reasons similar to those discussed above that Dolganow does not disclose, “in the terminal: receiving network information”, Applicant submits that Dolganow does not disclose “in the terminal: ... selecting a route via the network for packets from the terminal in dependence upon the network information” (emphasis added).

The Examiner states on page 10 of the Final Office Action that “The Examiner maintains in fig. 1 of Dolganow, the Originating Switch 30 can be viewed as the source/terminal since the Originating Parties 10 must transmit their packets to the Originating Switch”. Applicant respectfully submits that in the scenario alleged by the Examiner, the last hop wireless link would not be considered by the Originating Switch for the reasons described in the present application and detailed above. Specifically, if a node within a network is selecting a route through the network for a packet, the node is not considering the link between a wireless terminal and the node when it makes that decision. When viewed as a whole, the claim recites that it is the terminal that makes the selection based on a combination of received network information and information dependent upon wireless communications between the terminal and a least one of the nodes. While the Examiner concedes that Dolganow does not disclose this entire limitation, Applicant submits that without this limitation being taught by Dolganow, it simply emphasizes that Dolganow is not performing selection of a wireless link in which the wireless link is pertinent to the selection process, as evident in claim 1.

Also with regard to claim 1, the Examiner concedes that the combination of Alriksson and Dolganow does not disclose “selecting a route in dependence upon information dependent upon wireless communications between the terminal and a least one of the nodes”. However, it is alleged that McAllister discloses this limitation.

Applicant submits that McAllister is another example of a network in which a network node performs selecting a route, not a wireless terminal in communication with a node of the network in which the wireless terminal performs selection of a route, as recited in claim 1. Applicant submits that McAllister, in view of the disclosure at paragraph [0007] (i.e. the use of link costs) is a particularly good example of what is described in the present invention on page 8, namely “known route selection processes take place in the nodes of the network, and link state messages are only exchanged between the nodes”. Clearly, there is no discussion in McAllister regarding using “information dependent upon wireless communications between the terminal and a least one of the nodes”, which includes last hop wireless link conditions between the wireless terminal and an access node of the network, in selecting a route for the packet.

Regarding the “information dependent upon wireless communications between the terminal and a least one of the nodes” being defined in the previous Office Action response as “information that is not forwarded from other nodes regarding the link, but known information available in the terminal relating to its wireless links with at least one other node in the network”, which the Examiner alleges at the bottom of page 10 and the top of page 11 of the Final Office Action is a limitation not found in the claim, Applicant respectfully disagrees with the Examiner. While that language is not verbatim from the claim, Applicant submits that this is the subject matter recited in claim 1.

The claim recites that selecting a route is performed “from the terminal in dependence upon the network information and information dependent upon wireless communications between the terminal and a least one of the nodes” (emphasis added). Applicant submits that since the network information is recited as being received by the terminal and the information dependent upon wireless communications is not recited as being received at the terminal, the information dependent upon wireless communications is inherent at the terminal. Furthermore, since the “information” is recited as information that is dependent upon wireless

communications between the terminal and a least one of the nodes, Applicant submits that this is information based on a link between the terminal and at least one node. Since it is a wireless link, the link is range limited and does not necessarily include every link to every node in the network. The wireless communications between the terminal and a least one of the nodes are typically a link between the terminal and a node a first hop away from the terminal, also considered to be "the last hop wireless link between the terminal and the network" page 9, lines 8-9 of the present application. Therefore, Applicant submits that what was paraphrased with regard to the claim language in clarify the meaning of the claim for the understanding of the Examiner is the limitation recited in the claim.

For at least the reasons discussed above, Applicant respectfully submits that the combination of Alriksson, Dolganow and McAllister does not teach all the limitations recited in claim 1, as alleged by the Examiner. Furthermore, the Examiner has failed to explain why the missing features would be obvious to one skilled in the art. Without all the limitations of claim 1 being disclosed by the three references and no reason provided by the Examiner why these missing limitations would be obvious, it is not reasonable to expect that the combination of references would render claim 1 of the present invention obvious.

#### Reason to Combine

Once the scope of the prior art is ascertained, the content of the prior art must be properly combined. An obviousness inquiry requires review of a number of factors, including the background knowledge possessed by a person having ordinary skill in the art, to determine whether there was an apparent reason to combine the elements of the prior art in the fashion claimed by the present invention. For the Patent Office to combine references in support of an obviousness rejection, the Patent Office must identify a reason why a person of ordinary skill in the art would have combined the references *KSR Int'l v. Teleflex, Inc.*, No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007), Id. at 15. Even if the Patent Office is able to articulate and support a suggestion to combine the references, it is impermissible to pick and choose elements from the prior art while using the application as a template.

Applicant submits that there is no suggestion of a desirability of the claimed invention in the references that would serve as a reason for one skilled in the art to combine the references. Applicant submits that the Examiner has failed to provide a suitable explanation of why one would combine the three cited references when the two references being relied upon for the majority of the steps of the method claim are unrelated to wireless communications.

The Examiner alleges in the Final Office Action that a reason to combine the references is that all of the references disclose “source routing”, wherein the source determines a route over which a packet will be forwarded via the network. Applicant respectfully submits that while Dolganow and McAllister may disclose source routing from network nodes, neither reference suggests or discloses taking into consideration “information dependent upon wireless communications between the terminal and a least one of the nodes”, i.e. a wireless link between the source selecting the route and a device wirelessly communicating with the source. Despite the Examiner’s allegation that such a network node can be considered a source/terminal, Applicant submits that it is inappropriate to equate the network nodes of Dolganow and McAllister with a terminal, when the network nodes of Dolganow and McAllister clearly do not have the functionality of a wireless terminal capable of utilizing “information dependent upon wireless communications between the terminal and a least one of the nodes”, as recited in claim 1. In addition the Examiner has not suggested a suitable reason for suggesting that the network nodes of Dolganow and McAllister could be considered equivalent to the terminals in terms of selecting a route. Applicant submits that if they did suggest such an equivalency, then such a disclosure in Dolganow and McAllister would have substantially amounted to the Originating Parties 10 in Dolganow and/or the Users 1,2,3,4 in McAllister being capable of selecting a route for a packet at the terminal. Applicant submits that such functionality is not disclosed in either Dolganow or McAllister.

In addition, the Examiner’s motivation for combining Alriksson, Dolganow and McAllister is tied to the Examiner’s view that these references teach all the limitations of claim 1. As detailed above, this is an incorrect interpretation of the combination of references, and as such this renders defective the Examiner’s reasoning for combining the references.



The Examiner alleges that it would have been obvious to modify the system of Alriksson by "receiving, via a respective wireless link from at least one of a plurality of wireless access nodes forming a network, network information relating to links between nodes and selecting a route via the network for packets from the terminal in dependence upon the network information and supplying packets with information relating to the selected route" as allegedly disclosed by Dolganow. The Examiner alleges that such a modification would benefit the system by ensuring the terminal chooses a route based on the current available bandwidth between the links. Applicant submits that Dolganow discloses networks in which the switching nodes, not wireless terminals, receive information and select an appropriate route. Applicant submits that there is no provided reason why the network nodes selecting the route, which is what is disclosed in Dolganow, would be beneficial and advantageous over a communication terminal (the end user in Dolganow), and specifically a wireless communication terminal, selecting the route, which is what is recited in claim 1. Therefore, Applicant maintains that the Examiner has not provided a suitable reason for combining Alriksson and Dolganow.

The Examiner alleges that it would have been obvious to modify the system of the combination of Alriksson and Dolganow by selecting a route in dependence upon information dependent upon communications between the terminal and at least one of the nodes as allegedly disclosed in McAllister. The Examiner alleges that such a modification would benefit the system by ensuring that the chosen route is affordable to the user. Applicant submits that Dolganow and McAllister both disclose networks in which the switching nodes, not wireless terminals, select an appropriate route. Applicant submits that there is no provided reason why the network nodes selecting the route, which is what is disclosed in Dolganow and McAllister, would be beneficial and advantageous over a communication terminal (the end user in Dolganow and McAllister), and specifically a wireless communication terminal, selecting the route, which is what is recited in claim 1.

Based on the comments provided above, Applicant maintains that the Examiner's selection of Alriksson is based on hindsight selection solely for its disclosure of a wireless terminal. The Examiner concedes that Alriksson does not disclose any of the steps of the method performed by the wireless device in claim 1 of the present application. As Alriksson does not disclose the active method step limitations of claim 1, which are alleged to be disclosed by the

other two references, it is improbable that one skilled in the art would consider such a reference in combination with the other two references, neither of which discloses wireless terminal functionality.

Applicant submits that since Dolganow and McAllister do not disclose a wireless terminal receiving network information and selecting a routing path for a packet based on network information and information dependent upon wireless communications between the terminal and a least one of the nodes, but instead disclose a network node that does not consider information dependent upon wireless communications between the terminal and a least one of the nodes, each of Dolganow and McAllister teach away from a wireless terminal receiving network information and selecting a routing path for a packet based on network information and information dependent upon wireless communications between the terminal and a least one of the nodes. Applicant submits that this is a reason that one skilled in the art would not combine Dolganow and McAllister with Aliksson in the manner alleged by the Examiner.

In addition, as each of Dolganow and McAllister do not operate in the same manner as Aliksson, Applicant submits that the proposed modification of the references resulting from the combining of the references suggested by the Examiner would change the principle of operation of each of Dolganow and McAllister or Aliksson, as Dolganow and McAllister operates in a different manner than Aliksson. Applicant submits that this is another reason that one skilled in the art would not combine Dolganow, McAllister and Aliksson in the manner alleged by the Examiner.

For at least the reasons discussed above, Applicant submits that the Examiner has failed to provide a suitable reason for combining the cited references.

Applicant submits that the Examiner has failed to meet the initial burden of establishing a *prima facie* case of obviousness in view of limitations of claim 1 not being disclosed by the combination of references and failure to provide a suitable reason for combining the references. It is respectfully requested that the Examiner reconsider and withdraw the obviousness rejection to claim 1.

## ***Claim 2***

### Missing Elements

Claim 2 is dependent upon claim 1 and includes the additional limitation “in the terminal, monitoring a status of the selected route”. The Examiner alleges that Dolganow discloses this limitation in the abstract in the form of “source routing protocol uses the available resource advertisement for identifying a path”. There is no suggestion or disclosure in the abstract of Dolganow that the terminal monitors the status of a selected route. Firstly, as discussed above, Dolganow is not directed to the originating parties (communication terminals) performing any selection of routes or monitoring of those routes. Secondly, in the abstract of Dolganow there is no specific disclosure of any form of “monitoring the status of the selected route” (emphasis added). The abstract merely describes that “The method advertises the available resource information for the node to adjacent nodes linked to the node in the network when the node receives a request for a connection to be routed over the link, the request seeking resources exceeding available resources for the link, but not exceeding the last advertised resources for the link” (emphasis added). There is no disclosure of what occurs after the request is granted.

### Reason to Combine

For at least the reasons discussed above with regard to the rejection to claim 1, Applicant submits that there is insufficient reason to combine the references as alleged by the Examiner.

Applicant submits that claim 2 patentably distinguishes over the cited references of Alriksson, Dolganow and McAllister. It is respectfully requested that the Examiner reconsider and withdraw the obviousness rejection to claim 2.

### ***Claims 3 and 15***

#### **Missing Elements**

Claim 3 is dependent upon claim 1 and includes the additional limitation “in the terminal, receiving and monitoring network information to determine a status of the selected route and, selectively in dependence upon the determined status, selecting a new route via the network for packets from the terminal”. The Examiner alleges that Dolganow discloses this limitation in the abstract, pointing to the same subject matter as in the rejection of claim 2. For reasons discussed above in the rejection of claim 2, Applicant submits that Dolganow does not disclose the additional limitation of claim 3.

#### **Reason to Combine**

For at least the reasons discussed above with regard to the rejection of claim 1, Applicant submits that there is insufficient reason to combine the references as alleged by the Examiner.

Claim 15 recites similar subject matter to claim 3 and patentably distinguishes over the combination of references for at least the same reasons discussed above.

Applicant submits that claims 3 and 15 patentably distinguish over the cited references of Alriksson, Dolganow and McAllister. It is respectfully requested that the Examiner reconsider and withdraw the obviousness rejection to claims 3 and 15.

### ***Claims 14, 24, 27 and 28***

Claims 14 and 24 are additional independent method claims that recite respective methods that are performed in the terminal. Claim 27 is an independent claim directed to a method of “routing packets from a wireless communication terminal via nodes of a network” wherein the steps are controlled by the wireless communication terminal. Claim 28 is an independent claim directed to a method of communication in a wireless access node of a network wherein the node receives packets including routing information selected by the wireless communication terminal. As claims 14, 24, 27 and 28 all pertain to a wireless terminal operating

in a similar fashion to claim 1, Applicant submits that claims 14, 24, 27 and 28 patentably distinguish over Alriksson, Dolganow and McAllister. It is respectfully requested that the Examiner reconsider and withdraw the obviousness rejection of claims 14, 24, 27 and 28.

***Claims 4 to 8, 11 to 13, 16 to 18, 21 to 23, 25, 26 and 29***

Claims 4 to 8, 11 to 13, 21 and 22 are dependent, either directly or indirectly, on claim 1. Claims 16 to 18 and 23 are dependent, either directly or indirectly, on claim 14. Claims 25 and 26 are dependent, either directly or indirectly, on claim 24. Claim 29 is dependent on claim 28. For at least the reason of their dependence on claims 1, 14, 24 and 28, Applicant submits that dependent claims 4 to 8, 11 to 13, 16 to 18, 21 to 23, 25, 26 and 29 patentably distinguish over the combination of Alriksson, Dolganow and McAllister.

It is respectfully requested that the Examiner reconsider and withdraw the obviousness rejection of the identified dependent claims.

**Claims 9, 10, 19 and 20**


Claims 9, 10, 19 and 20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Alriksson, Dolganow and McAllister and in view of other references. Claims 9 and 10 depend indirectly on claim 1 and claims 19 and 20 depend directly on claim 14. In view of Applicant's submission regarding the 35 U.S.C. 103 rejection of claims 1 and 14, dependent claims 9, 10, 19 and 20 should also be patentable.

In view of the above discussion, the Examiner is respectfully requested to withdraw the 35 U.S.C. 103 rejections of claims 9, 10, 19 and 20.

In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

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